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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,025	09/11/2003	David M. Anderson	10018707-3	6779

7590 01/10/2005  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
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EXAMINER	
TAT, BINH C	
ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/661,025

**Applicant(s)**

ANDERSON, DAVID M.

**Examiner**

Binh C. Tat

**Art Unit**

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12, 14-18, 20-22, 24-26 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 7, 13, 19, 23, 27 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This office action is in response to application 10/661025 file on 09/11/03.

Claim 1-31 remain pending in the application.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 15-18, 20, 21, 24 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Shinagawa U.S. Patent No. 6,363,368 B2.

The Shinagawa reference teaches a method, apparatus and storage medium to effect an improved optimal solution search wherein genetic algorithms can be executed at a high speed.

Shinagawa teaches the generation of a set of mating combinations such that each combination comprises chromosomes wherein each chromosome comprises at least one gene (figure 1; Columns 2 and 6). Moreover, the reference teaches assigning a fitness value to the mating combination, which is analogous to assigning a composite score to each combination so as to select a particular combination using a value that favors the combination(s) with a favorable composite score (columns 2, 6, 7 and 20).

Column 9 discloses the assigning of a score by computing the product of the scores in assigning a composite score to each mating combination. The reference also illustrates with figures 9 and 11 that the object is to select the best combination thereby precluding a particular combination to be elected more than once (column 15).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5, 6, 8-12, 14, 22, 25, 26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinagawa U.S. Patent No. 6,363,368 B2, as applied above.

As to the limitation of sorting the mating combinations from most favorable to least favorable according to their associated composite scores, the Shinagawa reference discloses discriminating chromosomes to determine whether it is suitable for a particular genetic operation to take place on the basis of its fitness value, or its composite score (column 10).

Official notice is taken that such determination involves sorting in the claimed order so as to ensure the highest fitness value (favorable) is obtained and updated accordingly, all of which would allow the genetic algorithm to end at some point (column 12). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this step because it is crucial that the optimal solution be actually realized and executed, and to be done so at high speed.

With regards to selecting a particular combination whose index corresponds to the selection index, this is similar to the probability technique mentioned in column 14 of the reference, which one of ordinary skill in the art would have understood to be an inherent step in accomplishing the task of determining execution schedules of various genetic operations.

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Respecting these claims, the reference shows the operation of recombining chromosomes (crossover) and mutation, which is an operation of varying genes in a chromosome in a fixed probability to produce a new gene (column 7). One of ordinary skill in the art would therefore have understood this to entail duplicating one of the first parent and the second parent to produce a child chromosome, wherein the gene is then subject to mutation.

As to the limitation of each gene representing a characteristic of an instance in an integrated circuit, column 6 of the reference teaches each gene as the components of a data area or a data array, which one of ordinary skill in the art would have associated with common characteristics such as size and voltage.

#### **Allowable Subject Matter**

Claims 7, 13, 19, 23, 27 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason is the inclusion of the specific manner in which genes are compared copied and selected.

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***Conclusion***

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh C. Tat whose telephone number is (571) 272-1908. The examiner can normally be reached on 7:30 - 4:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Smith can be reached on (571) 272-1907. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-1908 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



Binh Tat  
Art unit 2825  
January 7, 2005

TUANDO

Primary examiner

01/08/2005